

THE OFFICE ACTION

In the final Office Action issued on May 3, 2007, the Examiner rejected **claims 1-13 and 45** under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner rejected claims **27-34 and 37-39** under 35 U.S.C. §112, second paragraph, as failing to comply with the written description requirement.

The Examiner rejected **claims 1-7, 12, 13 and 45** under 35 U.S.C. §103(a) as being unpatentable over WO 01/89001 to Srivastava et al. ("Srivastava") in view of U.S. Patent No. 6,168,892 to Ohara et al. ("Ohara"). The Examiner also rejected **claims 14-16, 18-21, 25 and 26** under 35 U.S.C. §103(a) as being unpatentable over Bokor in view of U.S. Published Patent Application Publication No. 2004/0051444 to Schaepekens et al. ("Schaepekens") and either 2002/0174794 to Lowden et al. ("Lowden") or EP0087745 to Wyner et al. ("Wyner"). The Examiner also rejected **claims 14-20, 25-26, 40, and 43** under 35 U.S.C. §103(a) as being unpatentable over Srivastava in view of Schaepekens and either Lowden or Wyner. **Claim 46** was rejected based on Srivastava in view of Ohara. The Examiner indicated that **claims 22-24 and 41-42** contained allowable subject matter.

Claims 1-34, 37-43, and 45-46 are pending in the application.

REMARKS

Amendments have been made to the claims to address the Examiner's objections/rejections to these. In light of these amendments and the following comments, Applicants respectfully request withdrawal of all rejections.

A. The Claims Satisfy §112

The Examiner rejected claims 1-13 under §112, second paragraph as being indefinite. Specifically, the Examiner objected to the wording "and/or" in claim 1. Applicants have made an amendment to reword the claim to satisfy §112. Applicants request withdrawal of this rejection. Likewise, an amendment was made to claim 27 to address the Examiner rejection based on lack of written description. Withdrawal of this rejection is requested.

B. The Claims are Patentable Over Srivastava in view of Ohara

The Examiner rejected claims 1-7, 12, 13 and 45-46 under 35 U.S.C. §103(a)

as being unpatentable over Srivastava in view of Ohara. Applicants respectfully traverse.

First, there is no motivation to combine Srivastava with Ohara. Ohara is directed to a color image forming method comprising applying additive color mixing (in the form of a phosphor in one embodiment) to a subtractive color mixture to perform color correction. The process is directed to improving the color quality of a image on a hard copy, such as various papers, films, etc. (See col. 9, lines 36-61). It has no applicability to lighting devices for emitting light, as is the case in Srivastava and the present application. It is true that Ohara discloses the use of UV excitable dyes. However, Ohara it is in a completely different field of art from Srivastava and the present invention, and relates merely to their use with a subtractive color mixture.

Ohara is in a non-analogous field of art from Srivastava and one skilled in the art practicing the invention of Srivastava would not look to Ohara for any teachings. That is, as the Examiner will appreciate, the combination of elements from non analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. *In re Oetiker*, 24 USPQ2d 1443 (Fed. Cir. 1992).

While it might possibly be said that both Srivastava and Ohara disclose phosphor compositions, they are used for completely different purposes and the uses are far too remote to be considered analogous prior art. It cannot fairly be said that one skilled in the art to which Srivastava pertains (LED devices for general illumination) would reasonably be expected search the technical fields to which Ohara belongs (color correction on hard copy). Thus, even assuming that all of the limitations of the present claims can be found by culling from the prior art parameters to fit the claimed invention, it is improper to pick and choose individual elements from assorted prior art references to recreate the claimed invention without some motivation to do so. *Symbol Technologies, Inc. v. Opticon, Inc.*, 19 USPQ2d 1241 (Fed. Cir. 1991). As is well accepted, if a cited reference "is not analogous art, it has no bearing on the obviousness of the patent claim." *Jurgens v. McKasy*, 18 USPQ2d 1031 (Fed. Cir. 1991).

Furthermore, the Examiner provides no motivation for combining the two references. In this respect, the Examiner states that "it would have been obvious to include said limitation in view of Ohara et al., who, in a patent on forming color images and color mixing, teach the inclusion of $Y_3Al_5O_{12}$, Ba_2SiO_4 and a phosphor

comprising the phosphor $\text{Sr}_2\text{P}_2\text{O}_7\text{:Eu}$ ".¹ The Examiner has not provided any motivation here however. Instead, he has essentially just said "since Ohara discloses such a blend, it would have been obvious to include it in Srivastava." However, this DOES NOT satisfy the Examiner's prima facie obviousness rejection. Rather, to support such a rejection, a showing of a motivation to combine references "must be clear and particular...broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence." *In re Dembiczak*, 50 USPQ2d 1614 (Fed. Cir. 1999). Conclusory statements on the propriety of combining the teachings of prior art references, such as those provided by the Examiner in this case, are insufficient to sustain an obviousness rejection. *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002).

According to MPEP §2143.01, the "fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness." Merely because claimed elements are individually found in the prior art, it does not necessarily follow that it would be obvious to combine the elements from different prior art references. See, MPEP §2143.01 *citing Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). Consequently, absent a motivation to combine or modify the references, it is irrelevant that the elements and/or limitations may be individually or separately known in the prior art. Clearly, the Examiner is motivated to modify Srivastava with Ohara for no other reason than to arrive at the claimed invention. This is a classic example of impermissible hindsight.

However, even assuming that the proposed combination was proper, such a combination would still not disclose or suggest the claimed phosphor combination. That is, the Examiner states that Ohara discloses the inclusion of $\text{Y}_3\text{Al}_5\text{O}_{12}$, Ba_2SiO_4 and a phosphor comprising the phosphor $\text{Sr}_2\text{P}_2\text{O}_7\text{:Eu}$. Applicants submit, however, that Ohara does not disclose a blend of such phosphors, but merely that these phosphors are all suitable for use in the invention therein. A close reading of Ohara reveals that Ohara clearly discloses these as alternate suitable phosphor crystals, and provides absolutely no suggestion that a blend of these phosphors would be desirable.

In this respect, Ohara actually teaches away from a blend of these phosphors

¹ Applicants dispute that Ohara teaches such a combination, but will deal with that issue separately below.

because such a blend would not work in Ohara. In this respect, Ohara clearly teaches the use of a phosphor having an emission in a relatively narrow region of an unwanted absorption of a subtractive color mixture. This emission color will vary from yellow to cyan, depending on the color of the subtractive color mixture. The claimed phosphor blend, on the other hand, has multiple emission peaks (i.e. one for each of the phosphors) such that a white light is produced. The use of a white light phosphor blend would defeat the purpose of Ohara, which aims to produce an emission in a region of unwanted absorption only.

Further, despite the Examiner's arguments to the contrary, Ohara does not disclose the specific phosphor blend. Rather, it discloses a very large list of suitable phosphors. The Examiner provides no reason why one would choose the specifically claimed phosphor blend for use in Srivastava among the almost infinite combination of phosphors that Ohara might suggest. As the Examiner will appreciate, where the reference does not highlight the claimed compound among the many disclosed, obviousness does not result. *In re Kollman et al.*, 201 U.S.P.Q. 193 (CCPA 1979). Nor does anticipation or obviousness result when one skilled in the art would have to choose judiciously from a series of possible combinations. *In re Sivaramakrishnan*, 213 U.S.P.Q. 441 (CCPA 1982). Similarly there can be no anticipation or obviousness where compositions are disclosed in extremely broad terms, so that the likelihood of arriving at the claimed composition would be the same as discovering the combination of a safe by an inspection of its dials. *Ex parte Garvey*, 41 U.S.P.Q. 583 (POBA 1939).

For at least these reasons, withdrawal of this rejection is requested.

C. The Claims are Patentable Over Bokor in view of SchaePKens and either Lowden or Wyner

The Examiner rejected claims 14-16, 18-21, 25 and 26 as being unpatentable over Bokor in view of SchaePKens and either Lowden or Wyner. Applicants respectfully traverse.

The Examiner admits that Bokor does not teach a phosphor composition including one or more garnet phosphors and a magnesium fluorogermanate. The Examiner states that it would have been obvious to include such phosphors in view of ShaePKens, who "in a patent application on lighting apparatus (see title and abstract) including color conversion of primary light from light emitting

apparatus...hence analogous art, teach the inclusion of both a garnet phosphor having the general formula as claimed...and a magnesium fluorogermanate...Motivation to include both...phosphors immediately derives from the suitability of said phosphors for conversion of UV light to produce components in the spectrum."

Applicants submit that the proposed combination of Srivastava with Shaepkens is improper for at least the following reasons. First, despite the Examiner's assertion to the contrary, Shaepkens is NOT directed to a lighting apparatus for providing illumination, as Bokor and the present invention are. Rather, as can be clearly seen from even a cursory examination of Shaepkens, it is directed to electroluminescent ("EL") displays and devices. That is, Bokor and the present invention are directed to white light LED devices including an LED chip and a phosphor material positioned around the chip, most often suspended in a transparent encapsulant. The LED chip emits light as a result of electronic excitation. This light is partially or fully absorbed by the phosphor material, which emits light of a different wavelength. The LED devices are useful in general illumination applications for replacement of other light sources, such as incandescent lamps.

Shaepkens on the other hand, is directed to a completely different device, an EL display device. These devices are constructed completely differently, and produce light according to different processes than the LED devices of Bokor. The EL displays of Shaepkens include successive layers of a substrate, an anode, an organic EL, and a cathode. Light is produced by the organic layer by passing a voltage from the anode to the cathode, by the injection of holes and electrons into the substrate. The anode is generally transparent to allow transmission of the light. (see generally paragraphs 0026-0028). The EL devices are not general illumination devices as can be found in Bokor.

The Examiner attempts to defend his position by stating that "Schaeapkens' teaching is on phosphor selection, the purpose of the phosphor being identical to the purpose of the phosphor selected by both Applicant and [Bokor], i.e., changing the wavelength of light emitted by a light source, and hence Schaeapkens is indeed reasonably pertinent to the problem [Bokor] and the Applicant try to solve."

Applicants concede that the "purpose" of the phosphor is the same in the devices. However, that fact does not end the inquiry. Just because an element has

the same "purpose" as an element in another reference, does not mean that it is suitable for use in that other reference. By way of analogy, think of an electric motor and a gasoline engine. Both are used to power a vehicle in which they are contained, but it would be disingenuous at best to state that because they are used for the same "purpose", that it would be obvious to substitute one for the other in any particular device.

Further, the Examiner's response to Applicants' assertion that phosphors suitable for use in EL devices are not necessarily suitable for use in LED based lighting devices, and vice versa based on a number of factors, including phosphor efficiency, saturation effects, and intensity of the produced light is dismissive and not in accord with the understanding of those skilled in the art. For example, it is well known that phosphors for use in mercury vapor discharge lamps and the like, whose "purpose" is ostensibly the same as phosphors for use in LED lighting devices, are not necessarily suitable for use in such devices. That is, it is well known that some phosphors suitable for use in such discharge lamps cannot be used in LED based devices for the reasons cited above. If the Examiner seeks to maintain this stance and so wishes, Applicants can provide evidence or a declaration from the inventor that many phosphors used in EL devices are unsuitable for use in LED devices, and vice versa.

It is not the Applicants' duty to teach the Examiner simple principles well known and understood by those skilled in the art. Applicants suggest the Examiner conduct further research before making unsubstantiated statements to the effect that "the efficiency, saturation and intensity from a prior art view cannot be considered to influence the phosphor's suitability in any but the very highest power levels in which optics become non-linear". This statement is guilty itself of being unsubstantiated and is almost egregious in being irrelevant and indeed, incorrect.

It cannot fairly be said that one skilled in the art to which Bokor pertains (LED devices for general illumination) would reasonably be expected search the technical fields to which Shaepekens belongs (EL displays), nor would one be motivated to combine the teachings of Shaepekens with Bokor, as there is no indication that the phosphors disclosed in Shaepekens would be suitable for use in Bokor. Thus, even assuming that all of the limitations of the present claims can be found by culling from the prior art parameters to fit the claimed invention, it is improper to pick and choose individual elements from assorted prior art references to recreate the claimed

invention without some motivation to do so. *Symbol Technologies, Inc. v. Opticon, Inc.*, 19 USPQ2d 1241 (Fed. Cir. 1991). As is well accepted, if a cited reference "is not analogous art, it has no bearing on the obviousness of the patent claim." *Jurgens v. McKasy*, 18 USPQ2d 1031 (Fed. Cir. 1991).

Furthermore, there is no motivation to combine either Wyner or Lowden with either Bokor or Shaepkens. Wyner is directed to a metal halide arc discharge lamp while Lowden is directed to impregnating a bullet with a luminescent substance. Neither is directed to an LED based lighting device or an EL display. The fact that these references disclose the recited phosphor as suitable for use in their application does not suggest or imply that they would be suitable for use in either of the devices of Bokor or Shaepkens. Again, they are non-analogous art and one skilled in the art would not look to either reference.

Finally, the Examiner provides no reason why one would choose the use of magnesium fluorogermanate phosphor in Shaepkens for use in Bokor among the other red phosphors disclosed in paragraph 0039 of Shaepkens. As detailed above, where the reference does not highlight the claimed compound among the many disclosed, anticipation does not result.

For at least these reasons, withdrawal of this rejection is requested.

D. The Claims are Patentable Over Srivastava in view of either Schaepkens and either Lowden or Wyner

The Examiner rejected claims 14-20, 25-26, 40 and 43 as being unpatentable over Srivastava in view of Schaepkens and either Lowden or Wyner. Applicants respectfully traverse.

The reason that this proposed combination does not render the claims patentable is for the same reasons as outlined above with respect to Bokor, Shaepkens, Lowden and Wyner. That is, Srivastava, like Bokor, is directed to LED devices for general illumination. The other references are directed to non-analogous subject matter and one skilled in the art would not seek to combine the teachings of the references, even assuming such a combination would be possible.

CONCLUSION

It is respectfully submitted that the subject application is now in better condition for allowance.

If any fee is due in conjunction with this filing, please charge any and all fees to Deposit Account No. 06-0308.

Respectfully submitted,

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